

**Information Services Annual Report 2020/21**  
**Theme: Student Success and Economic Development**  
**Prepared by: Kyle Brown, CIO**

**Summary**

Technology is a vital component in the support of teaching, learning, and business activities. This year, as in recent past years, Information Services has seen a growing demand for both new technologies and operational support needs for existing technologies from the campus community - this is reflected in the volume of requests and complete project lists. The list of accomplishments below is not exhaustive but highlights significant projects and trends of this past year.

Unique to our operations this year was the uncertainty of operations leading into the Fall 2020 semester. With enrollments, budgets, and course delivery modality in flux, deferred maintenance of some physical facilities and lifecycles was implemented to focus resources on needs of remote workers and students. Federal funds arriving during Spring 2021 semester, and more stable outlook for Fall 2021 semester, allowed us to move forward with routine business in addition to addressing the deferred maintenance. The result in one of the busiest summer IT project cycles seen at the college.

Also unique to operations this year was the growth of system-wide initiatives and mandates. Projects with hard deadlines and little notice from Albany related to managed print, security, and SUNY Online related infrastructure disrupted local projects and campus initiatives.

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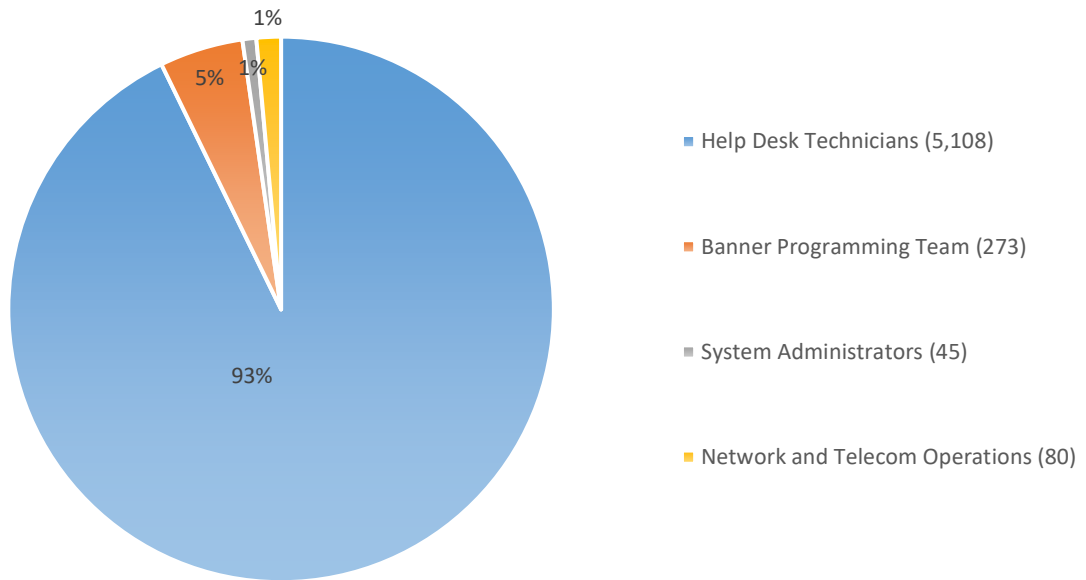
**Helpdesk**

The Help Desk continues to generate support request tickets through various methods including telephone, e-mails, and walk-in traffic. During the period of July 1, 2020 – June 30, 2021 there were over 5,000 tickets created in PerfectTracker with 93% of these generated by the Help Desk technicians and student support staff. According to PerfectTracker, Help Desk Technicians and student support staff accomplished a 13.5% increase in tickets generated.

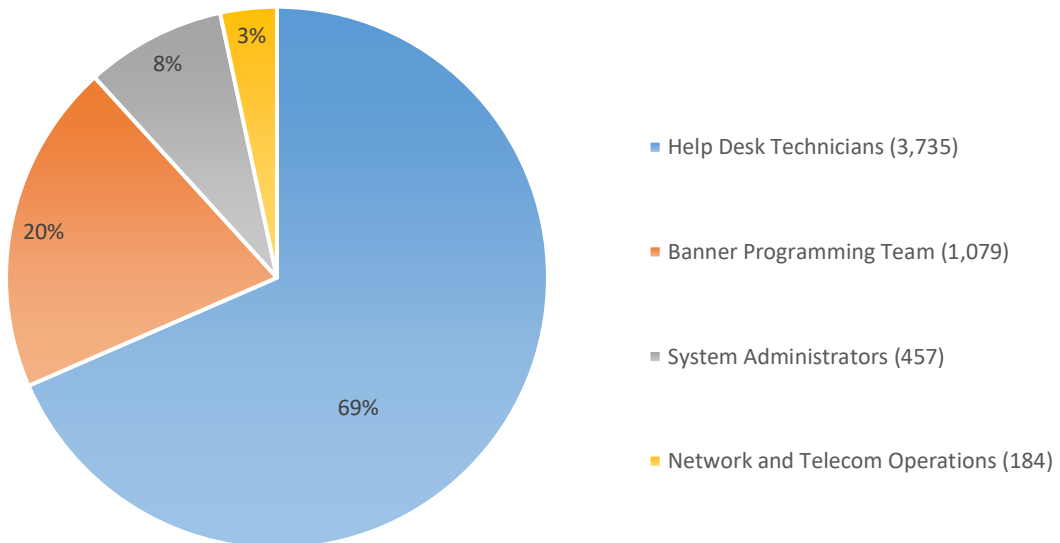
The Help Desk continues to support and collaborate with various campus offices to deliver efficient resolutions to support requests. End-user support has been greatly enhanced with the addition of BeyondTrust software which provides technicians with the necessary tools to virtually support both state-issued and personal devices.

According to PerfectTracker, the Help Desk closed over 3,700 tickets during the period of July 1, 2020 – June 30, 2021. This is a 30% increase from last year and is attributed to: increased virtual support requests, assistance with MFA setup required for compromised accounts, and assistance for MFA setup to reach campus services from off-site locations (Guacamole, RDS, and WorkFlow). We also continue to see increased requests for password assistance.

### PerfectTracker Tickets Generated 07/01/20 - 06/30/21



### PerfectTracker Closed Tickets 07/01/20 - 06/30/21



### **Multimedia Support**

Although the Help Desk received minimal requests for multimedia support throughout this time period, we did support multiple Commencements and other year end ceremonies. Each ceremony supported required our team to monitor the stream while operating both the camera equipment and PC used for video playback. Also, a higher level of coordination was needed between the Help Desk and the audio technician that assisted with these events.

### **Flex Classroom and Mobile Cart Support**

The Help Desk and Learning Spaces Technician supported an increasing number of faculty members within the campus Flex classrooms and experienced no major disruptions to student experience. This fiscal year saw an increase of 21 hybrid-style courses (35 total) when compared to last fiscal year (14 total). 8 new Flex classrooms and 5 additional mobile carts will be added during this summer, further increasing support needs.

### **Technology Enhanced Classrooms and Student Labs**

The Help Desk has begun preparing for the largest summer PC replacement project to date. This summer we will be replacing all instructor station PCs across campus with the exception of Nevaldine Hall; all all-in-one PCs located in student labs and within the Southworth Library; all PCs located in NN119; and all PCs, monitors, and peripherals in the eSports Arena. We will also be preparing 40 student laptops to be used by Jumpstart and EOP.

Also, provided all social distancing restrictions have been lifted, we will be returning each PC to their original academic location. We will also be relocating a portion of the current PCs, monitors, and peripherals from the eSports Arena to the new gaming wing in Heritage Hall.

As mentioned in the previous year-end report, the demand for Flex Classroom instruction continues to grow with additional classrooms and carts being equipped with the necessary technology. During this time period our Learning Spaces technician supported approximately 60 courses with the appropriate training and equipment support. With demand increasing, an additional Learning Spaces technician will be beneficial to the Help Desk, faculty, and students.

### **Faculty/Staff Computers**

The Help Desk will be preparing over 50 new laptops for faculty and staff members across campus. We also hope to regain the laptops that have been loaned to campus members (25) as our standard loaner pool is depleted.

### **Student Lifecycle - 2020**

- Configured Dell quote to purchase 60 Optiplex 5080 PCs for campus instructor stations to include 4-year warranty service & asset reporting
- Configured Dell quote to purchase 26 new gaming workstations for NN119 to include 4-year warranty service & asset reporting – to date, the asset report for these devices arrived in my inbox and I placed it on our file share and notified Zach to incorporate MAC addresses into MDT & Ben so he's aware of the progress
- Configured Dell quote to purchase 155 Optiplex 7480 All-in-One units for placement in Wicks Hall 006 & 008 as well as Southworth Library student access spaces to include 4-year warranty service & asset reporting

## **Multimedia Upgrades/Improvements/Other**

- Dana Hall classroom technology & other CJ needs:
  - Rm 229 & Rm 230 – Crestron technology installed in Spectrum desk along with two 98” wall-mounted TVs and other campus standard technology for instructional display
  - Rm 222 – Crestron technology installed in Spectrum desk along with laser projector & ceiling-recessed motorized screen and other campus standard technology for instructional display
  - Rm 222 in progress – converged modality technology parts & pieces are all ready for installation but we await approval on audio baffles for acoustic management – once approval is received, ceiling speakers & microphones will be ordered to complete project – I am not convinced this room will be completed by fall startup
  - Rm 202 – CJ student lounge – 55” LCD wall-mounted TV & HDMI port for remote device connection installed
  - CJ outer lobby & CJ reception suite – 55” LCD TVs installed for digital signage use – training materials to be provided
  - Rms 225A-225H – CJ interview rooms – pinhole & pan/tilt/zoom cameras & microphones installed in each room and 4-rack-mounted NVR units installed in 2<sup>nd</sup> floor data closet – training materials will be provided
- In UP spaces the following rooms received wall-mounted TVs & HDMI ports for remote device connection: 114, 116, 118, 120, 122 & 132
- Conference room 130 – VC technology installed along with 55” wall-mounted TV. This technology is designed for BYOD
- Also in conference room 130 – additional wall mounted TV installed for use with campus cable TV system
- Briefing room 132 – 55” wall-mounted TV with HDMI input for remote device connection
- Reception room 108 – 55” LCD TV installed for digital signage use – training materials to be provided

## **Projects in Progress**

- Dana Hall – phase 2
- Wicks Hall 202/Cook Hall 102/NN115 – converged modality lite technology installations to be incorporated into existing Crestron-based touch panel technology
- Wicks Hall 204-206-208/Cook Hall 206/NS125 – converged modality technology installations
- Deployment of Team Dynamix ticketing system to improve support to the campus community.

## **Additional Accomplishments**

- Participated in multiple vendor site surveys, phone, video conversations and email exchanges with the vendor during the planning stages for campus upgrades including quote development for said projects
- Continue to work closely with Kivuto to ensure our work-at-home offerings & license files for students/faculty/staff remain current on our web store
- Created & distributed annual academic software survey to the campus and generated a composite of the results for the team’s use during lab image creation.
- Accomplished software license renewal cycle for campus, including acquisition of software downloads & license files for our applications as needed/required, including Microsoft, Adobe & Autodesk for Education

- Acquired ITEC-hosted files & licenses for our instances of Minitab, Maple & Esri
- Assigned online Esri accounts for classes as requested – Nick Wildey & Bob Blickewedehl use for their students
- Worked closely with SUNY during the transitional phase of physical plant only use of Autodesk from ITEC-hosted model and distributed appropriate documentation to campus users and modified use permissions as needed
- Acquired ITEC-hosted files & licenses for SPSS, both academic and administrative
- Updated for currency - SOPs for specialized tech installs for use by Help Desk
- Maintain campus standard Dell hardware quotes for IS website as periodically required
- Develop non-standard Dell hardware quotes for special-use cases for campus users
- Continue to arrange for site visits from PCC for equipment maintenance and repairs in our technology-enhanced spaces and assure work progresses – at times these visits extend into the evening

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## **Systems and Security**

### **COVID Response**

Systems staff returned to campus full time at the beginning of June 2020 to begin our datacenter storage and compute replacement and have continued to have a physical presence since. Continued use of RDS and Guacamole for remote computer access through the fall and spring semesters has expanded to more remote students. Prior to the start of the fall semester, an MFA requirement was added to both services and an import script that pulled CRNs from Banner to load students into the Guacamole database automated the process. An emphasis on support and security for remote students and staff continues into the next year.

### **Client systems and labs**

During this past year, the computer lab software and imaging responsibilities have been transferred to the new Client System Administrator. During the transition period several improvements were made, including additional efficiency in management and delivery of applications, as well as improved insights to client systems security. In addition, all the software license servers have been migrated to the most current operating system.

### **Apple/Mac devices**

Management of our Apple devices will improve with the recent subscription to the cloud version of Jamf Pro. Jamf will provide greater control over our Macs, particularly the newest models with Apple's M1 chipset that were going to be problematic with our existing management tools, as well as our iPads.

### **Microsoft Windows Clients**

Improvements in reporting and software utilization have been made with the implementation of POWERBI server. The completion of the transition from Sophos endpoint protection has been made migrating the remaining 390 staff computers to Windows Defender Advanced Threat Protection. Working with the Help Desk, the migration from Windows 7 to Windows 10 is nearly complete with only 41 Windows 7 machines showing up in System Center inventory reporting. As mentioned earlier with

the migration of the student file shares to OneDrive, testing for the OneDrive sync client implementation is currently in progress.

## **eSports**

In the eSports arena we were able to move from proof of concept to production with the open-source LanCache server. This was deployed to a server that hosts update content close to the gaming computers. This reduces the load on the network which in the past has caused bandwidth utilization issues on the network, impacting campus services. It also improves the time for installing updates on the gaming computers. Additionally, we have built images that are pre-configured to optimize the game downloads.

## **Server infrastructure / Cloud**

The Dell VxRail installation and deployment took place in June 2020. Work continued over the remainder of the summer to complete the deployment and migrate servers to the new environment. Since moving into full production, the vRealize and RecoveryPoint applications have been upgraded to the latest supported versions. We will be working with Dell this summer to schedule upgrades to the VxRail platform.

The old virtual infrastructure has been upgraded and redeployed as a test/staging environment, as well as for some backup and security tools.

In addition to the migration of SCCM and MDT, the following servers have been migrated:

- STAFFAPPS – application server for three applications that a group in Physical Plant and OHS use
- CHARON – file server for Banner reports
- ONGUARD (with vendor assistance) – door access system
- EMS (with vendor assistance) – event management
- GASBOY (with vendor assistance) – fuel pump management for Physical Plant
- KEYSTONE (with vendor assistance) – key inventory management for Greg Garvey

Completed upgrade to the Veeam backup infrastructure to the latest version and setup an immutable backup repository for the backups of Active Directory and some other core services. We are also doing a read-only volume snapshot of the Active Directory backups and have worked on testing recovery of Active Directory from the backups. Also reviewing some best practices for the design of Veeam to better secure it.

## **Information Security**

Upgraded Security Onion infrastructure to the latest version and working on the deployment of agents to monitor the servers and clients.

Some of the monitoring tools they have been deploying have included OSQuery, which provides for real-time querying on the status of a client; Sysmon, which provides verbose logging of events on clients; and OpenCanary honeypots to monitor for suspicious activity.

Using AlertLogic to run host vulnerability scans to identify weaknesses. Alert Logic's Cloud Defender and Microsoft's Defender ATP continue to be utilized to identify and investigate potential issues. Also implementing tighter security rules using Microsoft's Attack Surface Reduction and using Defender ATP's security recommendations to tighten the security of the servers and clients.

All of these tools produce a ton of event logs, which are being saved to centralized storage. We are currently utilizing over 24TB of storage for approximately 3 months of logs and parsing over 84 million logs over a seven-day period, even with a reduced population on campus.

## **The Future**

Since ransomware is our ever-present threat, increasing security will remain the priority in the coming year.

- Making MFA mandatory
- Removal of local admin privileges
- Developing a maintenance schedule for our servers so that they get patched on a more regular basis.
- Developing configuration baselines for our servers and clients so we can determine compliance.
- Security training for users.
- Removing systems that are no longer supported

We will need to invest more for security. With all the centralized logging we have enabled, we will need to expand our storage capabilities since all those logs eat up a lot of space. We will need to also look at new hardware to process all that data, which can be intensive.

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## **Telecommunications**

### **Operations**

- Call pilot voice mail system crashed- replaced a bad memory stick which allowed the system to boot and come back online
- Facilitated all moves, adds and changes requests in a timely fashion as they were requested
- Maintain Telstrat Engage call recording system
- Maintained Verasmart call accounting data base, providing accurate billing reports to our Student Accounts Office for non NYS customer recharges

## **Ongoing Projects**

- Have evaluated our cable TV infrastructure and identified areas where cabling upgrades need to be done in future infrastructure upgrades
- With an ongoing visual inspection, have located older rg59 coaxial drops and have either disconnected and removed them if, not in service, or replaced them with quad shield rg6 cabling to eliminate potential signal leakage ingress or egress- Ongoing
- Facilitated numerous telephone copper panel rehabs- replacing old cross connect cabling, reworking cabling routes and re-establishing terminations- Ongoing
- Dana Hall- Facilitated University Police relocation to the new footprint on lower level. Still responding to service requests in their area as they get acclimated
- Dana Hall- The Criminal Justice faculty have been all moved to the 2<sup>nd</sup> floor of Dana Hall and IP 1140e sets have been placed for them
- Payson Hall- Old Criminal Justice area- starting the prep work to make this a swing space for French Hall relocations
- Wicks Hall- Old University Police footprint- Starting the same prep work as in Payson Hall for French Hall relocations

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## **Enterprise Applications**

### **Accomplishment Statistics**

- 2761 Help Desk/Ad hoc tasks completed
- 19 completed projects
- 23 ongoing projects
- 18 pending projects
- 9 potential projects

The team's workload falls under 3 basic categories, day-to-day operations, project management and project development.

Day-to-day tasks include the following:

- Generating ad hoc reports and data extracts
- Troubleshooting and diagnosing reported problems
- Research
- Security and access privileges administration of Banner, BDM and Workflow systems
- Support for non-Banner systems such as Blackboard, Academic Works, TutorTrac, BDM and Degree Works
- Administrative tasks such as meetings and status reporting
- User Training
- Liaison with remote database administrators of SICAS and ITEC for technical upgrades and maintenance
- Setup/support semester processes such as orientation, application, registration, billing, health requirements compliance, institutional research reporting, grade processing, grant proposals
- Coordinate department processes through the use of operations calendars and through regular communications such as via Banner Advisory meetings



### **Breakdown of Day-to-day/Ad Hoc Tasks Completed**

Banner	1224
Administrative	971
Other Systems **	461
Account Setup	105
TOTAL	2761

**Number of Outstanding Help Desk Tickets:** 200

Other Systems covers work done in support of non-Banner systems including the following:

- Banner Document Management
- Banner Workflow
- Blackboard (Canton and SUNY Online)
- Degree Works
- OnGuard (Door Access Control Management System)
- EMS (Event Management System)
- MedicaT (Medical Records System)
- Academic Works (Scholarship Management System)
- Credentials (Electronic Transcripts)
- Maxient
- HR Acuity
- Rave Emergency Notification System
- Cbord Odyssey (CA)
- Slate (Canton and SUNY Online)
- Starfish (RooSuccess)
- Handshake (Career Services)
- eCampus (Bookstore)
- Presence (RooLife)

### **Projects/System Enhancements Completed**

- Day-to-Day/Help Desk Requests (refer to stats in prior page)
- eCampus implementation
- BDM Upgrade to 16.6
- Oracle 19c Upgrade
- Cashnet Migration from Weblogic to Tomcat
- Employee Parking Tag Request
- Photo ID Survey
- Late Semester Start Mass Update:
  - Fall 2020
  - Winterterm 2020
  - Spring 2021
- COVID 19 Tracking
- Workflow
  - Workflow MFA
  - Workflow Migration to v8.8
  - Leave of Absence
  - Change of Major

- Presence data handoff
- Raiser's Edge – retrieve graduation info from Banner
- Banner Security Audit
- Continuing project to convert processing tasks to self-service so users can do it themselves. Also convert processing tasks to be more autonomous so programmer intervention will not be needed. For example, programs that self-advance to the next term.
- and Public Relations.

### **Ongoing Projects**

- SSB9 Training/Education (Groovy, Grails, PageBuilder, Java, GIT, etc.)
- BDM for Trio
- Workflow
  - Application for Readmission - Admissions
  - Academic Forgiveness – Academic
  - Room Change - Reslife
- Slate Integration
- Global Proxy Access Multiple Relationships
- Accessibility
- Course Catalog Extract (Terminal Four CMS)
- PB Leveling screen
- EIS Onboarding to ITEC
- Automate posting Cashnet payments to TSAAREV
- Auto-refunding for Student Accounts
- SICAS SAP/GAS for federal and state
- Title IV survey data processing
- Time Ticketing enhancements
- Trio APR Automation
- Terminal4 connectivity to Ethos
- Vet Tech Task Tracking system
- SQR Migration
- Help Desk tickets
- Streamlining/Automation of Backend Processes
- Operations Documentation

### **Pending Projects**

- Migration from Blackboard to D2L
- SSB9:
  - SSB9 Migration
  - SSB9 reprogramming of Local SSB programs
  - SSB9 Forced Survey
  - Groovy Development for SSB 9
- Academic Works Banner Integration
- Account Creation Rewrite
- FAFSA Load Automatic Notification
- Workflow:
  - Preferred Name – Student Affairs
  - Election of a Minor – Academic
  - Prior Credit – Billing

- Rewrite of WF approver screens
  - Student Comments Survey Conversion
  - Rewrite Deposit Warehouse programs to SQL
  - DegreeVerify
  - Enrollment Verification
  - Account Creation Rewrite
  - CIC Feed Rewrite
  - Apply to Graduate enhancements
  - Change Good Academic Standing Code from 00 to GS
  - TBA on UCanWeb screens - ask Dean's Office about prevalence of TBA
  - SUNY Online Slate Feed via Mulesoft API
  - GORYHRB – Loading SUNY HR data into Banner
  - Shared Technology Platform
  - Tuition Waiver – HR
  - Workflow:
    - Grade Change - Academic
    - Midterm Grade Change – Academic
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## **Networking**

### **Completed Projects**

- Implemented BGP with NYSERNet connection.
- Cogent secondary ISP connection (BGP configuration change)
- Supported the Dana project which included moving from one data closet for the whole building to three new closets. Installed 9 new edge switches, over 30 APs and 3 UPS units. Plus the activation of many ports for users and devices.
- Technician responded to over 100 recorded troubleshooting and port activation calls
- Technician continued data closet cable plant re-organizations. These are time consuming as there can be well over 100 circuits in the larger data closets. This involves re-arranging patch cables, cutting them to length, color-coding AP patch cables and then re-bundling and re-dressing.

### **Ongoing Projects**

- New wireless controllers to allow us to install latest APs
- New wireless for ice arena and field house
- Moving firewalls into a high availability failover design
- Redesign of WAN connections to support new HA design and moving to Cogent as primary ISP
- License plate reader project – support for new fiber connections and two new remote equipment locations.

### **Statistics**

- Wireless:
  - We currently have 272 active APs on the WiFi 5 (802.11ac) capable equipment.
  - During the Fall 2019 daily peak times, we saw upwards of 1,500 active clients with AC gaining as the top protocol followed by 2.4GHz 11.n and 5GHz 11.n in third place.
  - 148 network devices (switches, Firewalls, wireless controllers, NACs, etc)

- 46 UPS systems
- Applications:
  - HTTPS remains the top application seen, followed by DNS and HTTP, LDAP and SMB.
- Device types:
  - Windows 8/8.1/10 devices are seen the most, followed closely by Apple iOS devices with Android a distant third. Mac OS devices are fourth followed by Windows Vista/7 devices with a smaller number of miscellaneous devices such as Chromebooks.

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## **Operations**

### **FY20-21 Purchasing Transactions: 136**

- Managed Tech Fee account totaling \$742,046.66 in incoming revenue and OTPS purchases totaling \$1,033,443.49
- Managed other IFR accounts totaling \$18,153.61 in incoming revenue with purchases totaling \$15,208.45
- Managed State OTPS budgets of \$45,515 with purchases totaling \$40,928.68
- Larger scale purchases and numerous tracking spreadsheets were created:
  - Esports Arena - \$90,417.25
  - CARES Funded Purchases - \$378,200.24
  - COVID-19 Purchases- \$31,991.85
  - EIT Purchases - \$1,647.34
  - Travel - \$1,803 (2 individual registrations for virtual conferences/training programs processed)
  - Maintenance/Support/License Renewals – \$525,632.21 (67 transactions)
- Monitored SUNY-Wide Campus Expenditures - \$259,755

### **Operations Savings & Tracking - \$7,039.55**

Efforts to save money continued in FY2021 by pursuing competitive pricing, while monitoring accounts closely for budgetary errors, requiring staff to apply for Individual Development Awards for travel. IT secured a substantial savings in all areas of fiscal accountability.

- Equipment Savings - \$3,144.84
- Maintenance/License/Support - \$3,237.48
- Supplies - \$657.23

**Managed Budget Category Assignment Coding: 98** (Maintenance Codes-78; University-Wide-6; General Spending-14)

**PIA Processing: 10** (Adobe, ASI, Autodesk, Collaborate Webinar, Microsoft Azure, Open SUNY Services, SUNY SOC Membership, SICAS RPS, SPSS, VMware)